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A note on the new subject(s) of Art and Technology

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A NOTE ON THE NEW SUBJECT(S) OF ART AND TECHNOLOGY

Marcelo Guimarães Lima

Reflecting on the role of drawing in the education of artists today, Stephen Farthing pointed out the moving context of art education under the impact of new technologies, and the related ongoing negotiations and shifts in this new *terra non-firma* of artistic and educational practices. Farthing observes that in the education of artists in recent times, the initial process of a relatively rapid substitution of traditional media and methods by new media and new practices and goals, is followed now by a more mediated or mitigated approach “ *Today, driven less by a sense of disappointment with the new than a sense of physical and emotional loss we appear to be mid way through a process of re-acquaintance with both the strengths and weaknesses of our own hands and the strengths and weaknesses of new technology.*” (1)

My goal here is an initial examination of the general *terms* by which we approach this new context and situation. To briefly examine, related to the subject of art and new artistic and educational practices, the general conditions or the general delineations of the new technological environment of today which, as we all know by now,

affects in various ways not only our representational systems and therefore our ways of thinking, but our symbolic universe in general and the totality of our symbolic practices and meanings.

It is well known that process of structural changes in technology as in the culture, in social forms and ways of life, come about broadly as responses and solutions to given, pressing and urgent questions and problems. However, as the dictum attributed to Goethe goes: "The solution of every problem is another problem". In this sense this paper is consciously one more presentation of the problem, not of the solution, according to the idea that in theoretical labor the *problem* "is" the "solution", or more specifically, to be able to determine the problem "is" the "answer", that is, to be able to *specify* the *conditions* and *contours* of a problem is indeed a way to advanced our knowledge (and it is in itself an already ambitious goal.)

Moreover, in speaking of art and technology we can sate that between the hand and the eye, the history of art practices is indeed a "technological" history, for a piece of charcoal in the hand of a prehistoric cave "artist" or image producer, or a pencil and sheet of paper in the hands of an artist today, are indeed artifacts of technology: whether as the result of an instrumental gesture adapting given materials to a new finality, or creating original instruments from new necessities developed within established and

evolving systems of knowledge, technological systems and related systems of production.

Indeed, in a general sense *instrumental mediation* is one of the central elements that characterize the development of the human species, including the symbolic capacities and processes of the human mind, from *homo habilis* and *homo faber* to *homo sapiens* and, probably, beyond.

The analogies between the tool and the symbol, considered as an “instrument” of the mind, was explored by the Soviet psychologist Lev Vygotsky in his “semiotic –historical theory of human development” in the early part of the 20th century. The world of culture, in the anthropological sense, can be defined as a space of mediation, an artificial environment built to channel, deviate and delay human responses to the pressures, external and internal, of the world of nature.

Indeed space and time are transformed by human cultural practices, by instituted and self-instituted distance and delay. The time of biological development, for instance, is mediated and qualitatively transformed in human beings by the *praxis* of culture, that is, the time of the symbol and of signifying processes: the semiotic dimension. Upon the biological apparatus of the individual a symbolic apparatus is built that refashions the rhythms of individual and collective development, its refashions functions,

means and also, in essential ways, the *telos* of human developmental processes.

In this sense, it is fair to say that we have been always there, or here, in the shifting soil of constant transformations, in the unstable ground of historical development, in the essential *plasticity* of human nature. As the sciences of life and the sciences of the brain tell us today, plasticity is indeed a fundamental dimension of the human biological and neuronal apparatuses and their processes.

And yet is not enough to see the general analogies between past and present, but it is necessary to mark also their specific differences. As a new time prepares the next, as new problems follow from the solutions of previous problems, we witness qualitative transformations, radical changes.

The history of technology is a history of disappearances, erasures and losses, closely related to the history of science as characterized by Thomas Kuhn: earlier technologies and technological systems are subsumed, absorbed, and deconstructed to finally disappear, erased in the face of new formations, new knowledge and related new methods and new technological means or solutions.

Comparing the history of art and the history of science

Kuhn writes: "The past products of artistic activity are still vital parts of the artistic scene" while "in science new breakthrough do initiate the removal of suddenly outdated books and journals from their active position in a science library ... unlike art, science destroys its past" (Kuhn 1977 p. 345) When the work of Picasso entered the museum, it did not replace the work of Rembrandt in the way that a new discovery in science eliminates previous works from the shelves of our scientific libraries, and new technologies eliminate from given fields previous methods, previous machines, materials and processes.

But what if, as many contemporary analysts observe, we have in fact entered a period of historical mutation, variously named the Technological Revolution, the Age of Computers and Digital Technologies, the Third Scientific Revolution, corresponding perhaps to a Third Industrial Revolution (which is no longer industrial but "post-industrial")? What if this historical mutation is in fact, as some contemporary analysts conceive, the *mutation of history* itself? What if the relationship to the past, the relationship to history proper to the scientific-technological system as characterized by Kuhn, is about to or has indeed penetrated and transformed culture itself, and constitutes now not simply a theoretical model of explanation or a conceptual paradigm, but the very fabric and soil of our condition and our experience today?

In such a situation, the obsolescence of technological or scientific products may be mirrored by the obsolescence of art products. If this is the case, or may be the case, we can ascertain that the relationship of art to its past has been affected in essential ways: the time of art has mutated. And if art is (or was) in fact essentially a certain relationship to time, that is, to a constitutive dimension of human experience mediated by a specific class of objects, actions and forms that we call aesthetic or artistic, what we may characterize as a *mutation in time and of time itself* signal a crucial transformation of art.

In this hypothesis, both Rembrandt and Picasso are at risk now, not of being expelled from the museum, but of being confined in there forever. It is the museum itself, this library of past forms and therefore of past experiences, that risks now to become irrelevant, because the history it tells is in the verge of becoming a sort of closed book, for the past experiences and points of view that it stores have become unintelligible as such, and therefore meaningless and useless, and the history of art itself has become a narrative of our own misunderstandings about those objects and practices and their meanings.

Already in the early 1800s Hegel pointed out to a process of radical transformations in the arts that he explained as the conclusion of a period, the end of an age, the passing of a world, the completion of a specific figure of development

entailing in fact the supersession of art into the new time. In the modern world, describing the transformations that he was able to witness, art remains, observed Hegel, and will remain as a kind of memory of an earlier, a youthful age of the mind, but it no longer is related to the vital center, the living soul or the very motor of modern culture.

In this sense, we can observe, art approaches philosophy, which, for Hegel, is the reflection of a history already made. "*The Owl of Minerva only takes flight at dusk*", the famous remark by Hegel states that philosophy can only know those forms of reality that have completed their historical development into a final stage. Knowledge of the human world is always retrospection. Hegel's *Aesthetics* is a celebration of art, and especially of the visual arts, that he appreciated and in fact knew very well, that is at the same time the mourning of art: it is a kind of memorial celebration.

Echoing Hegel, Adorno in the late 60s in his seminal *Aesthetic Theory*, examining the constitution of modern art, that is, of an autonomous domain of aesthetic experience, practices and products, a domain emancipated from magic and religion and from the social delimitation of manual labor, observed: "It is uncertain whether art is still possible; whether, with its complete emancipation, it did not sever its own preconditions." And in the opening sentence of his books, Adorno states in a luminously

concise form the condition of art in the second half of the 20 century as a condition of *loss of evidence*. It is evident, he wrote, that *“everything that pertains to art is nowadays no longer evident”*. And his Aesthetic Theory is the brilliant examination of this process that we can identify as the process of our growing “incomprehension” or the progressive “unintelligibility” of the phenomenon of art, its fall into relative “obscurity” as a product of historical development. Art is no longer self-evident as such. It has, we can state, lost its evidence to itself.

Jacques Ellul in the early 1950s writing about the impact of technology in the modern world observed a kind of mutation in the relations between the social world and what was up to that point in time supposed to constitute its “products” or “instruments”, that is, the products of the human mind and of human actions and abilities: technology as a network of processes, methods, materials, human knowledge embodied in machines, considered traditionally as tools or instruments, understood as kinds of “mechanical servants” of man, etc.

He named the new emerging reality the **Technological System**, stressing by that term the fact that embedded within the social process, technology was constituting itself as a kind of “totality” in itself, facing the totality of the social system, it was becoming an **autonomous system** at the core of the vital processes, both material and symbolic,

of society.

To Ellul the essence of modern technology is the fact that from an aggregation of means it has become *a new milieu*, that is, a total environment within society. As it mediates man's relation to nature and man's relation to man in ever more comprehensive ways, embracing more and more aspects or dimensions of life, it progressively subsumes and subordinates as well as excludes other possible forms of mediation: poetic, religious, mythological, symbolic, etc. It becomes the unmediated foundation and horizon as such of contemporary society and of modern life.

The autonomous workings of the technological system shape a new type of environment, and therefore a new type of subject within this environment, for whom the "goals" and workings of the system itself are not recognized as such, but are taken to be those of the human bearers of the system's processes.

Adaptation to the technological environment is what defines the refashioning of human culture in contemporary society. For Ellul, the Technological System is a self-regulated and self-propelled totality that as such excludes external control; it excludes human direction, human intervention and human goals. Excluding human choices, it excludes as well human responsibility. Human autonomy and freedom are made into the illusory effects

of an autonomous-automatic global technological process molding the “life-world” of modern societies.

What human beings desire and value, in such a context, are in fact not the results of autonomous constructs and decisions, of a free mind and a free will asserting itself and realizing its powers in the world, against the resistance of reality, but what we may call the *circle*, the *domain* or the *system* of human needs and desires becomes an “expression” of the possibilities already determined by technology itself.

The result of such a state of affairs is a “crisis of values”, such as those of “freedom”, “autonomy”, “choice” and “responsibility”. In the context of the technological system as described by Ellul, such a crisis of values becomes the general crisis of “value” itself.

“Technical growth, writes Ellul, leads to a growth of power in the sense of technical means incomparably more effective than anything ever before invented” and, since technological thinking can’t by itself decide on goals, that is it can’t think and decide other than by technical criteria, the “goal” of such a process is “internalized”, so to speak, that is, the thinking that is proper technology as a system of means turns into the unique criterion and unique determinant value: technology knows only the value of “efficiency” that can equally be applied to the cure of

deadly diseases as to the development of more efficient biological weapons of mass destruction. In this context “the growth of power becomes the objective itself : power creating...more power.” With the growth of power “the possibility of action becomes limitless and absolute” and “when power becomes absolute, values disappear”. (Ellul, 1962)

Responding to contemporary critics that accused him of providing a fatalistic, monolithic, a distorted and ultimately false view of the present, Ellul observed that his concept of the Technological System was a picture of *manifested tendencies* of the modern world. Those who disliked that picture had to be able to detect, describe, disclose or provide the counter-tendencies to the forces structuring the modern technological system and modern culture.

Art and the Technological System: The Empire of Nonsense

The Empire of Nonsense is the title of Ellul’s book on art in the contemporary world, published in 1980. A rather provocative title indeed, but the nonsense associated to art here does not refer to the conventional “petit-bourgeois” criticism of contemporary art as “meaningless” to the ordinary man. What is the place of art in the Technological System? Art subordinates itself to technology, in the sense

that society itself becomes subordinate to a technical system that has become *autonomous*.

The realm of value is that of culture. And yet a culture subordinated to the autonomous workings of the Technological System, where the necessary distinction between means and ends becomes problematic at best, is an "emasculated" culture, incapable of renewing itself from its own inner processes, energies and initiatives and therefore incapable to respond to the challenges of the times. Confronting the Technological System art responds either by mimicking its processes, by focusing on method and process and reproducing the circuitry of technology, art begets art in the same way that technology begets more technology, or by compensatory practices, offering a kind of "shelter and relief " from the harsh realities of a domesticated, rationalized world. In both cases it serves to reinforce the *status quo*.

To Ellul, *art enacts unconsciously the loss of value in the modern world, and therefore its own loss of function, the loss of a cultural ground for its development*. Contemporary art represents its own demise, it formalizes its own impotence facing a reality that, according to the French philosopher, eliminates the question of ends and therefore excludes the quest for meaning, and restricts the domain of experience to the actual and the given.

A paradox of today: the scientific imagination of our time may indeed promise and deliver wonders of technological accomplishments. And yet in its present forms, science is unable to the accomplish or perform self-reflection, and therefore it is unable to choose on its own from all that *can* be accomplished technically, what should or should not be done.

Ellul's criticism of contemporary art discloses what we may call the "false consciousness" of art today. It is in part an "indictment" of contemporary art. On one hand it shows the impasse of art in the world today, it reveals the self-delusions of artists when they are unaware of the real conditions of their practices.

On the other hand, it discloses what we may call a tragic dimension of the situation of the arts, and in this sense may also be understood, in spirit if not in the letter, as a kind of celebration of the "heroic" efforts of contemporary artists, of those who, aware of the present day challenges and risks, persist against all obstacles.

Ellul's ideas, after more than 50 years of their initial formulation, may still help us to map some of the complexities of our situation. For, as Ellul himself observes, nostalgia is not a solution to our problems, the arrow of time can't be reversed, and technology itself can't simply be put away: in history as in life there is no return

to a previous condition or state of being. "All regret for the past is vain; every desire to revert to a former social stage is unreal. There is no possibility of turning back, of annulling, or even of arresting technical progress. What is done, is done. It is our duty to find our place in our present situation and in no other. Nostalgia has no survival value in the modern world and can only be considered a flight into dreamland." (Ellul, 1962) What is necessary indeed is lucidity, that is, a deeper understanding of the present and future effects of technology in our knowledge of the world and of ourselves.

Central to such a task today is the understanding of technical images. According to Vilem Flusser, we live in the world being shaped or reshaped by technical images that announce a mutation in the culture and in our ways of life.

The Technical Image

The universe of technical images, according to Vilem Flusser, is absorbing and transforming the universe of texts, that is the cultural forms that emerged from the linear codification and transmission of experience and information in literate civilizations. The universe of technical images is in fact absorbing and transforming all,

or what is left of, previous modes of communication and thinking,

The historical path towards the universe of technical images has developed in five “phases”: *First*- a phase of primitive immersion in a four-dimensional universe of space-time, a continuum of concrete experiences uniting humans and animals. *Second* - a graspable three-dimensional world of made and manipulated objects, the initial ground of subjectivity and survey, the period of stone age implements. *Third*- a two dimensional universe of images, that is of pictures on surfaces, mediating the relations of subject and the world, such as in the cave paintings of prehistorical times. *Fourth* - the introduction of linear texts mediating between the subject and its images. *Fifth* - the radical transformation of linear texts by digital technologies, texts are transformed into images, a process that reveals a kind of relative exhaustion of linear modes of communication. And yet, this is certainly not a reversal to a previous period for these new images have little to do with previous types of images.

What are technical images? They are, simply stated, images created by apparatuses such as the photographic camera, the video camera, the computer and other digital, computerized machines and processes. Superficially they may resemble images in the traditional sense, or share some characteristics with them. However they are of a

totally novel kind (to the point that may be perhaps misleading to call them all by the same name). Technical images are born of the dismembering of linear texts into free falling particles, without dimensions, without meaning, that had to be reassembled into calculable processes and their corresponding forms. Technical images are made of codes and coding processes.

Traditional image processes work from the concrete to the abstract, from the 3D or 4D world into a surface. The technical image starts with unrepresentable elements and processes, it works from the “abstract” to the “concrete”, and it generates a virtual image, that is, an image that exists in the distributed space and time of a new kind of “surface”, that is, in a dynamic or transient space, in the “impermanent”, movable ground of a screen.

What is peculiar to the technical image is not its capacity to represent, but to *model* reality. Technical images, according to Flusser, are projections, models, instructions. Technical images represent themselves and their processes of coming to be. This is the new center from which what Flusser calls the vector of meaning departs from in the universe of technical images: it moves away from us. We end up with, or within a world made of autonomous images, a world constructed by autonomous images where the users of images provide the necessary feedback information that will reinforce and develop the system:

users are used to grow more images after existing images. The fascination of technology, we can add, may indeed come from this very process of decentering, that engenders, among other effects, new and specific modes of *inaction* and the resulting demise of responsibility, a process that we witness as the spectacle of our own disappearance.

Embodiment: the extended subject, the extended mind and the thinking body

Given the ubiquity and centrality of technology and of the technical image today, how are we to conceptualize its impact on the arts? We can define artworks as *embodied values* and therefore, we can state that, today, confronting the new technologies that not simply extend but modify our perception of the world and our self-perception, our mental and physical spaces, and our experience of time, our modes of action and of interaction, the arts, and specially the visual arts, are faced with a double challenge that we can characterize as simultaneously a “crisis of values” (in the sense examined by Ellul) and a “crisis of embodiment”.

The notion of embodiment as a philosophical notion has its modern origins in the works of Merleau-Ponty (1908-1961). It is at the same time an epistemological or cognitive category, it interrogates knowledge and the production of

knowledge; it is an existential category: it interrogates being, with ethical and also aesthetic dimensions and implications.

Embodiment is a conceptual paradigm for the understanding of the complexity and unity of the human subject, the structure of the human world and of human experience, the structure of knowledge and of human understanding, and of human communication processes. It opposes dualistic views of the mind/ body split, that are reflected or duplicated also as the subject/ object division, and other reified oppositions in the philosophical tradition and, consciously or not, in modern thinking, such as reason/ emotion, action/ contemplation, matter/ spirit, etc.

The human being is a being in situation, it inhabits a material world and it is inhabited by this world. Knowledge is never a function of a disincarnated mind or spirit, but is an integrated, integrating process that has as its “instrument”, or rather, as its proper medium the body, that is, that unity of the experience of self and of the world that is the constitutive soil of human knowledge and of human experience as such.

The notion of embodiment informs today not only philosophy but the sciences of cognition, the sciences of the mind and of the brain-mind connections , the

neurosciences, and has contributed to the development of new scientific and epistemological models in those and related fields.

Thinking is a function of the body, that is, of the subject as a totality. The body thinks: those nerves, muscles, bones, organs, etc., for thinking is activity in the material world, the only possible *substratum* for the creation of meaning. The human being is a semiotic animal: it marks the world with symbols; it orients himself in space and time by mapping reality with inscriptions and signs and therefore both externalizes himself and integrates the externally formalized universe as a represented universe in the **space of the mind**, which is here more than a simply figure of the speech, but made of real contacts, of paths actually traveled, of memories and anticipations, of encounters with reality designing the contours of the self by a process of communication, of dialogue with others and the other. Knowledge itself, in this sense, becomes more than pure representation: it becomes a process of discovery of the paths towards the object that discloses, in a kind of circular movement, the original solidarity between the subject and the world.

Works of art are embodied values addressed to embodied subjects. They are not simply externalizations or inner processes but they address the situated roots of our being. Works of art not simply reflect or represent, but actively

constitute embodied subjects. Anthropologically considered art is *productive* of our humanity.

On virtual subjects

The virtual poses anew the question of embodiment: from the practices of communication, the ubiquity of the digital image, the extensions of mind and of the body in the world, the exchanges between life forms and technological structures and processes, etc. Facing digital technologies, the question of embodiment confronts the new processes of *virtualization* at work in the fields of knowledge, social practices, production, etc. Telecommunication, telecommuting, telejobs, etc., the practices of quotidian life are distributed in time and space, not only messages, but our actions, that is, our bodies, travel in space producing concrete results in faraway places. The vertigo of ubiquity also results in a sort of disorientation into the new territories of the virtual. The multiplication of the body is also the dispersion and the molding of subjectivity by the various forms and the conflicting energies of networks.

The *virtual* can be considered in two contrasting ways: as something less than real, of the order of the simulacrum, that is, a duplication of the surfaces of the real, without depth or substance, an illusion, it can be considered as impoverished reproductions or substitutes of reality, or, in contrast, it can be understood as the potentialization of

reality, that is, the opening up of possibilities within the real, and in this sense, the virtual belongs to the order of simulation and modelization with its wealth of new knowledge and new practices, with the multiplication of the subject and the mapping of new creative ways and directions. The virtual is indeed this tension between the condition of an errant subject, of wandering, of loss of home and direction, on one hand, and the discovery and exploration of new territories of human creativity, on the other, it discloses both the risks and the promises of an expansion of being.

It is within this dichotomy that the discourse and the practices of contemporary art in relation to the new technologies must be understood. As Bernard Stiegler observes, all technology is in principle ambivalent: literacy and writing, for instance, can be, and in fact have been in history, instruments of control as well as instruments of emancipation.

In Ancient Greece the word *Pharmakon* designated at the same time a medicine and a poison. According to Bernard Stiegler, the idea of the *Pharmakon* states that in what kills we may find also the principle of a cure. It is by facing the challenges of technology, understanding its pharmacological dimension that we may develop our ability to negotiate and control the difficulties and the perils of our “all too human” contemporary situation, to be

able to make sense of our changing reality.

The quote by Stephen Farthing at the beginning of this paper spoke of a sense of loss and a sense of limits, of a somewhat difficult but necessary negotiation on technology in the field of artistic education, which necessarily reflects the conditions of contemporary art. It alluded therefore to a *pharmacological* approach: to balance between the remedy and the poison. In art, as well as in life, there is a price to be paid for every innovation, as much as there is as a price to be paid for a refusal to change.

Note

- (1) Interview with Stephen Farthing by Marcelo Guimarães Lima, in *Panoptikon: On Contemporary Visual Culture*, (www.panoptikon.net) October, 2, 2011, <http://thepanoptikon.blogspot.com/2011/10/interview-with-stephen-farthing.html>

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